

## TWO NEW SPECIES OF MICROCADDISFLIES (TRICHOPTERA: HYDROPTILIDAE) FROM KENTUCKY<sup>1</sup>

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**ABSTRACT:** Two new species of microcaddisflies, *Hydroptila howelli* and *Hydroptila kuehnei* (Trichoptera: Hydroptilidae), from Kentucky are described and their affinities noted.

The caddisfly fauna of the southeastern United States has been fairly well studied, but new species continue to be found. This paper describes two new species in the genus *Hydroptila* from a single locality along Salt Lick Creek in Kentucky, an unaltered Reference Reach stream, draining a portion of the "Knobs", an area within the Interior Plateau ecoregion. Terminology used in the descriptions follows that of Marshall (1979). Specimen length was measured from the tip of the head to the end of the wings and is given as a range. Type material will be deposited at the National Museum of Natural History, Smithsonian Institution (NMNH), the Illinois Natural History Survey (INHS), the Branley A. Branson Museum of Zoology, Eastern Kentucky University (BAMZ) and the collections of the authors.

### *Hydroptila howelli* NEW SPECIES

(Fig. 1)

**Description.** Male. Length 1.9 - 2.1 mm. 27 antennal segments. Brown in alcohol. Venter of abdominal segment VII with short apicomeral process. Segment VIII triangular in lateral view, acute posteroventrally; in ventral view, deep rounded incision posteromesally, laterally terminating in several sclerotized teeth; nearly rectangular in dorsal aspect. Segment IX retracted within segment VIII in ventral view; in dorsal view, anterior portion retracted within VIII and mesally incised, posterior portion divided into pair of truncate lateral lobes, widely separated mesally. Tenth tergum broadly triangular, laterally with elongate, sinuate sclerotized processes with acute apices turned inward; in lateral view these thin processes sharply turned ventrad. Subgenital plate a rounded shelf in ventral view, bearing pair of short setae posteromesally. Inferior appendages in lateral view thin and elongate, clublike at apex; in ventral view widely separated, nearly parallel along mesal margin, outer margins sinuate, apices acute and strongly turned outward. Phallus tubular, widening at base and narrowing at midlength, ejaculatory duct protruding apically about 1/4 phallus length, thin paramere at midlength encircling shaft.

Female and larva. Unknown.

**Type material.** Holotype, male. Kentucky, LaRue-Marion County line, Salt Lick Creek on Salt Lick Road, 17 May 1996, at blacklight, R. Houpp and K. Houpp (NMNH). Paratype, same locality as holotype, 1 male (BAMZ).

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**Etymology.** Named for the late Dr. Henry H. Howell, in honor of his contributions to aquatic ecology. A teacher, friend and mentor.

**Diagnosis.** This species is similar to several species in the *H. waubesiana* group, including *H. delineata* Morton, *H. tridentata* Holzenthal and Kelly, *H. englishi* Hamilton, and *H. grandiosa* Ross. From the latter two species, *H. howelli* is separated by the lack of elongate, heavy spines from the sternum of abdominal segment IX. The new species is separated from other species in the *waubesiana* group by the ventral elongation of segment VIII, the elongate, sinuate lateral straps of the tenth tergite, and the thin, widely separated inferior appendages which are strongly hooked apically.

### *Hydroptila kuehnei* NEW SPECIES

(Fig. 2)

**Description.** Male. Length 2.8 - 3.1 mm. 28 antennal segments. Brown in alcohol. Venter of abdominal segment VII with short apicomesal process. Segment VIII annular; slightly incised along posterior margin in ventral view; dorsally with pair of crescent-shaped sclerites posteriorly. Segment IX elongate posterodorsally in ventral view; in dorsal view, emarginate posteriorly, elongate processes laterally, deeply incised anteriorly. Segment X fused with IX, dorsum divided at base into pair of thin arms, nearly parallel sided, distally with acute points apically and subapically; in lateral view, arms separated distally with apical points dorsad and ventrad. Subgenital plate in ventral view thin, lateral margins curved inward, rounded apically bearing pair of mesal setae. Inferior appendages elongate and thin in lateral view, sharply curved downward at base, apically with sclerotized ventral point; in ventral view short and slightly elbowed outward, heavy peglike setae subapically, elongate seta on lateral margin subapically and basally. Phallus tubular, widening at base, ejaculatory duct protruding distally, elongate paramere encircling shaft near midlength.

**Type material.** Holotype, male. Kentucky, LaRue-Marion County line, Salt Lick Creek on Salt Creek Road, 7 August 1996, at blacklight, R. Houp and K. Houp (NMNH). Paratypes, same data as holotype, 5 males (NMNH, INHS, BABMZ, REH, SCH).

**Etymology.** Named for the late Dr. Robert A. Kuehne, and his contributions to aquatic ecology. A friend, teacher and mentor.

**Diagnosis.** This species, another member of the *H. waubesiana* group, is most similar to *H. patriciae* Harris and *H. eramosa* Harper. With these two species, *H. kuehnei* shares the lateral elongation of abdominal segment IX and the division of the tenth tergite into two lateral arms. These lateral arms are elongate in the new species, but short in both *H. patriciae* and *H. eramosa* and terminate in long apical extensions in *H. patriciae*, but short acute extensions in *H. kuehnei* and *H. eramosa*. The inferior appendages are strongly elbowed in *H. patriciae* and to the lesser degree in *H. kuehnei*, but they are nearly straight in *H. eramosa*. As well, these appendages in both *H. eramosa* and the new species have a strong peglike seta apically which is absent in *H. patriciae*. The subgenital plate, in ventral view, in both *H. patriciae* and *H. kuehnei* is thin apically, but

broadly rounded in *H. eramosa*. This combination of characters serves to distinguish the new species from other members of the *H. waubesiana* group.

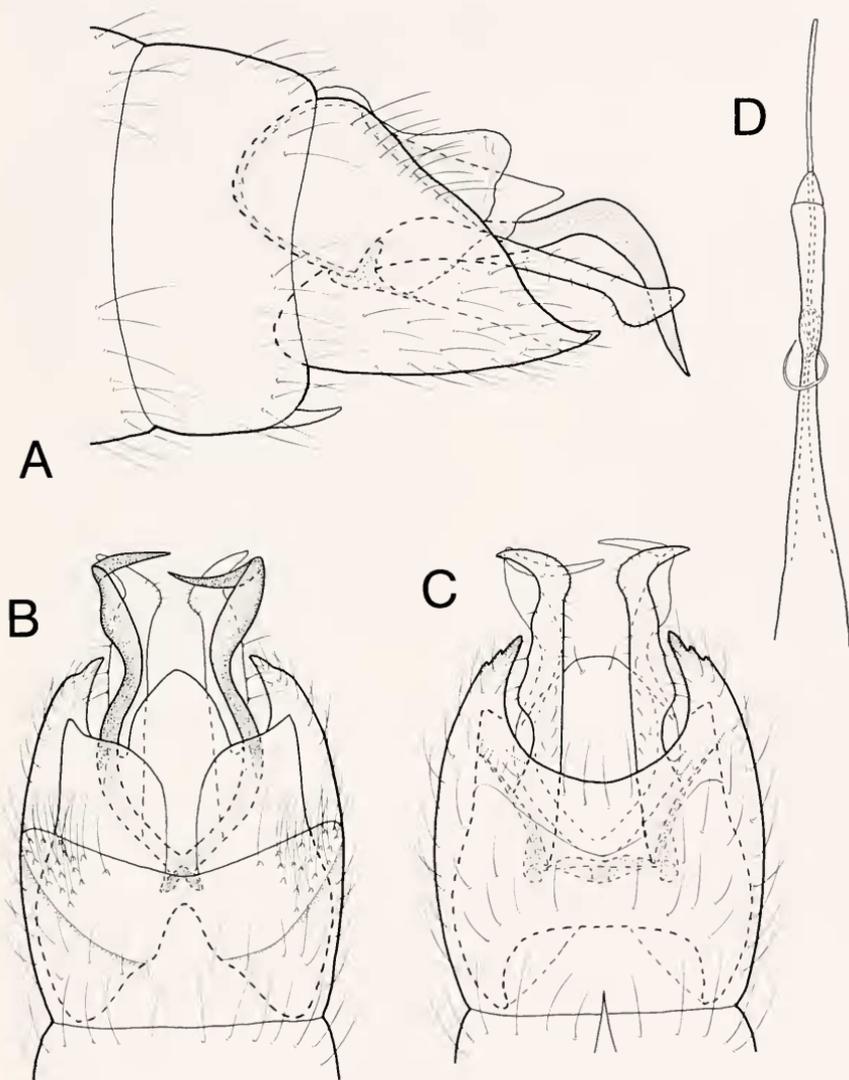


Figure 1. *Hydroptila howelli*, n. sp. male genitalia. A. Lateral view; B. Dorsal view; C. Ventral view; D. Phallus, ventral view.

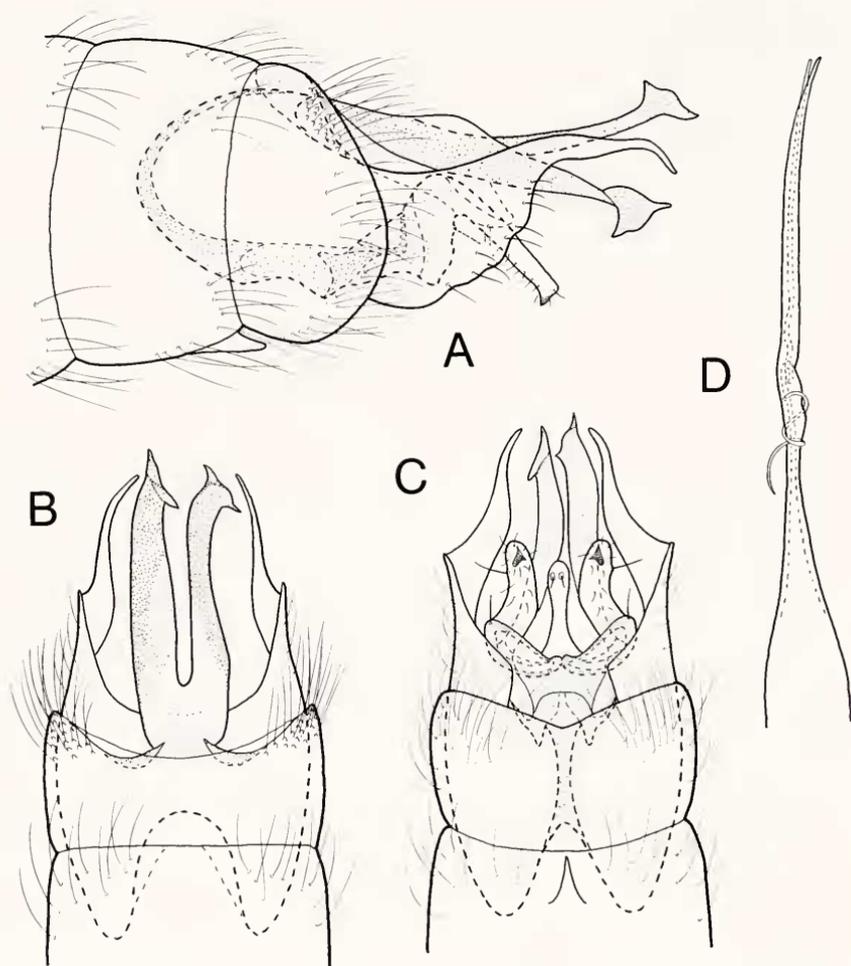


Figure 2. *Hydroptila kuehnei*, n. sp. male genitalia. A. Lateral view; B. Dorsal view; C. Ventral view; D. Phallus, ventral view.

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#### LITERATURE CITED

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